



1

SEQUENCE LISTING

<110> RATCLIFFE, PETER J.
PUGH, CHRISTOPHER W.
SCHOFIELD, CHRISTOPHER J.
HEWITSON, KIRSTY S.

<120> HYDROXYLASES AND MODULATORS THEREOF

<130> 06843-0091

<140> 10/531,662
<141> 2005-10-21

<150> PCT/GB2003/004492
<151> 2003-10-16

<150> GB 0224102.4
<151> 2002-10-16

<150> GB 0226598.1
<151> 2002-11-14

<160> 25

<170> PatentIn Ver. 3.3

<210> 1
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 1
Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu
1 5 10

<210> 2
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
Peptide

<400> 2
Pro Gln Leu Thr Ser Tyr Asp Cys Glu
1 5

<210> 3
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic Peptide

<220>
 <221> misc_feature
 <222> (16)
 <223> any naturally occurring amino acid except Asp

<400> 3
 Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Xaa
 1 5 10 15

Ala

<210> 4
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 4
 Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys Arg Gly Trp Gly
 1 5 10 15
 Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu Gly Asn Val Thr
 20 25 30
 Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala Gln Ile Lys Gly
 35 40 45
 Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp
 50 55

<210> 5
 <211> 62
 <212> PRT
 <213> Drosophila melanogaster

<220>
 <221> MOD_RES
 <222> (17)..(20)
 <223> Variable Amino Acid

<400> 5
 Glu Leu Ala Ala Asp Leu Arg Val Ser Asp Leu Asp Phe Ala Gln Gln
 1 5 10 15
 Xaa Xaa Xaa Xaa Pro Pro Asp Ala Val Asn Phe Trp Leu Gly Asp Glu
 20 25 30
 Arg Ala Val Thr Ser Met His Lys Asp Pro Tyr Glu Asn Val Tyr Cys
 35 40 45
 Val Ile Ser Gly His Lys Asp Phe Val Leu Ile Pro Pro His
 50 55 60

```
<210> 6
<211> 62
<212> PRT
<213> Drosophila melanogaster
```

```
<220>  
<221> MOD_RES  
<222> (15)..(19)  
<223> Variable Amino Acid
```

```

<400> 6
Ala Leu Lys Glu Asp Ile Ser Ile Pro Asp Tyr Cys Thr Ile Xaa Xaa
  1                               10                      15

Xaa Xaa Xaa Pro Gly Ala Val Asp Ile Lys Ala Trp Leu Gly Pro Ala
  20                               25                      30

Gly Thr Val Ser Pro Met His Tyr Asp Pro Lys His Asn Leu Leu Cys
  35                               40                      45

Gln Val Phe Gly Ser Lys Arg Ile Ile Leu Ala Ala Pro Ala
  50                               55                      60

```

```
<210> 7
<211> 65
<212> PRT
<213> Homo sapiens
```

```
<220>  
<221> MOD_RES  
<222> (18)..(21)  
<223> Variable Amino Acid
```

```

<400> 7
Lys Ile Val Arg Lys Leu Ser Trp Val Glu Asn Leu Trp Pro Glu Glu
  1             5             10             15

Cys Xaa Xaa Xaa Xaa Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val
      20             25             30

Arg Asp Ser Tyr Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val
      35             40             45

Trp Tyr His Val Leu Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro
      50             55             60

Thr
  65

```

```
<210> 8
<211> 80
<212> PRT
<213> Caenorhabditis elegans
```

<220>
 <221> MOD_RES
 <222> (17)..(36)
 <223> Variable Amino Acid

<400> 8
 Arg Phe Val Gln Glu Ile Ser Met Val Asn Arg Leu Trp Pro Asp Val
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30
 Xaa Xaa Xaa Xaa Pro Lys Val Glu Gln Phe Cys Leu Ala Gly Met Ala
 35 40 45
 Gly Ser Tyr Thr Asp Phe His Val Asp Phe Gly Gly Ser Ser Val Tyr
 50 55 60
 Tyr His Ile Leu Lys Gly Glu Lys Ile Phe Tyr Ile Ala Ala Pro Thr
 65 70 75 80

<210> 9
 <211> 71
 <212> PRT
 <213> Caenorhabditis elegans

<220>
 <221> MOD_RES
 <222> (17)..(27)
 <223> Variable Amino Acid

<400> 9
 Arg Phe Val Gln Asp Ile Ser Met Ala Lys Arg Leu Trp Ser Asp Val
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Ile Glu Gln
 20 25 30
 Ile Cys Ala Ala Ala Met Ala Asn Ser Tyr Thr Asp Phe His Val Asp
 35 40 45
 Phe Gly Gly Thr Ser Val Tyr Phe His Val Phe Lys Gly Glu Lys Ile
 50 55 60
 Phe Tyr Ile Ala Ala Pro Thr
 65 70

<210> 10
 <211> 77
 <212> PRT
 <213> Drosophila melanogaster

<220>
 <221> MOD_RES
 <222> (17)..(33)
 <223> Variable Amino Acid

<400> 10

Glu Ile Val Arg Gln Ile Asp Trp Val Asp Val Val Trp Pro Lys Gln
 1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30

Xaa Pro Lys Val Gln Lys Tyr Cys Leu Met Ser Val Lys Asn Cys Tyr
 35 40 45

Thr Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Ile
 50 55 60

Leu Arg Gly Ser Lys Val Phe Trp Leu Ile Pro Pro Thr
 65 70 75

<210> 11

<211> 73

<212> PRT

<213> *Saccharomyces cerevisiae*

<220>

<221> MOD_RES

<222> (19)..(29)

<223> Variable Amino Acid

<400> 11

Gln Asn Asp Leu Val Asp Lys Ile Trp Ser Phe Asn Gly His Leu Glu
 1 5 10 15

Lys Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Val
 20 25 30

Thr Lys Tyr Ile Leu Met Ser Val Lys Asp Ala Tyr Thr Asp Phe His
 35 40 45

Leu Asp Phe Ala Gly Thr Ser Val Tyr Tyr Asn Val Ile Ser Gly Gln
 50 55 60

Lys Lys Phe Leu Leu Phe Pro Pro Thr
 65 70

<210> 12

<211> 61

<212> PRT

<213> *Rattus norvegicus*

<400> 12

Lys Thr Asp Val Phe Gln Glu Val Met Trp Ser Asp Phe Gly Phe Pro
 1 5 10 15

Gly Arg Asn Gly Gln Glu Ser Thr Leu Trp Ile Gly Ser Leu Gly Ala
 20 25 30

His Thr Pro Cys His Leu Asp Ser Tyr Gly Cys Asn Leu Val Phe Gln
 35 40 45

Val Gln Gly Arg Lys Arg Trp His Leu Phe Pro Pro Glu
50 55 60

```
<210> 13
<211> 57
<212> PRT
<213> Caenorhabditis elegans
```

```

<400> 13
Phe Glu Asp Asp Leu Phe His Tyr Ala Asp Asp Lys Lys Arg Pro Pro
 1          5          10          15
His Arg Trp Phe Val Met Gly Pro Ala Arg Ser Gly Thr Ala Ile His
 20          25          30
Ile Asp Pro Leu Gly Thr Ser Ala Trp Asn Ser Leu Leu Gln Gly His
 35          40          45
Lys Arg Trp Val Leu Ile Pro Pro Ile
 50          55

```

```
<210> 14
<211> 60
<212> PRT
<213> Drosophila melanogaster
```

```
<400> 14  
Thr Ile Leu Asp Tyr Val Asn Lys Asp Tyr Asn Ile Gln Ile Asp Gly  
   1                               10                          15  
  
Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
      20                      25          30  
  
Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
    35                        40                45  
  
Gly Ala Pro Lys Thr Trp Tyr Val Val Pro Pro Glu  
   50              55              60
```

```
<210> 15
<211> 60
<212> PRT
<213> Homo sapiens
```

```

<400> 15
Thr Val Leu Asp Val Val Glu Glu Glu Cys Gly Ile Ser Ile Glu Gly
  1                               10                      15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala
      20                      25                      30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe
    35                      40                      45

```

Gly Glu Pro Arg Ser Trp Tyr Ala Ile Pro Pro Glu
 50 55 60

<210> 16
 <211> 56
 <212> PRT
 <213> *Caenorhabditis elegans*

<400> 16
 Thr Ile Leu Glu Asp Thr Asn Tyr Glu Ile Lys Gly Val Asn Thr Val
 1 5 10 15
 Tyr Leu Tyr Phe Gly Met Tyr Lys Thr Thr Phe Pro Trp His Ala Glu
 20 25 30
 Asp Met Asp Leu Tyr Ser Ile Asn Phe Leu His Phe Gly Ala Pro Lys
 35 40 45
 Tyr Trp Phe Ala Ile Ser Ser Glu
 50 55

<210> 17
 <211> 60
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 17
 Thr Ile Leu Asn Leu Val Asn Thr Asp Tyr Asn Ile Ile Ile Asp Gly
 1 5 10 15
 Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Ser Ser Phe Ala
 20 25 30
 Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe
 35 40 45
 Gly Ala Pro Lys Thr Trp Tyr Ala Ile Pro Pro Ala
 50 55 60

<210> 18
 <211> 60
 <212> PRT
 <213> *Homo sapiens*

<400> 18
 Thr Ile Leu Asp Leu Val Glu Lys Glu Ser Gly Ile Thr Ile Glu Gly
 1 5 10 15
 Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Ser Phe Ala
 20 25 30
 Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe
 35 40 45
 Gly Glu Pro Lys Ser Trp Tyr Ser Val Pro Pro Glu
 50 55 60

<210> 19
 <211> 58
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 19
 Phe Ala Ser Asp Trp Leu Asn Glu Gln Leu Ile Gln Gln Gly Lys Asp
 1 5 10 15
 Asp Tyr Arg Phe Val Tyr Met Gly Pro Lys Asn Ser Trp Thr Ser Tyr
 20 25 30
 His Ala Asp Val Phe Gly Ser Phe Ser Trp Ser Thr Asn Ile Val Gly
 35 40 45
 Leu Lys Lys Trp Leu Ile Met Pro Pro Gly
 50 55

<210> 20
 <211> 58
 <212> PRT
 <213> *Schizosaccharomyces pombe*

<400> 20
 Phe Ala Asp Asp Trp Leu Asn Ala Tyr Val Ile Asp Cys Glu Ser Asp
 1 5 10 15
 Asp Phe Arg Phe Ala Tyr Leu Gly Ser His Leu Thr Thr Thr Gly Leu
 20 25 30
 His Thr Asp Val Tyr Ala Ser His Ser Phe Ser Val Asn Leu Cys Gly
 35 40 45
 Val Lys Cys Trp Leu Phe Ile Asp Pro Lys
 50 55

<210> 21
 <211> 349
 <212> PRT
 <213> *Homo sapiens*

<400> 21
 Met Ala Ala Thr Ala Ala Glu Ala Val Ala Ser Gly Ser Gly Glu Pro
 1 5 10 15
 Arg Glu Glu Ala Gly Ala Leu Gly Pro Ala Trp Asp Glu Ser Gln Leu
 20 25 30
 Arg Ser Tyr Ser Phe Pro Thr Arg Pro Ile Pro Arg Leu Ser Gln Ser
 35 40 45
 Asp Pro Arg Ala Glu Glu Leu Ile Glu Asn Glu Glu Pro Val Val Leu
 50 55 60


```

Thr Asp Thr Asn Leu Val Tyr Pro Ala Leu Lys Trp Asp Leu Glu Tyr
65              70              75              80

Leu Gln Glu Asn Ile Gly Asn Gly Asp Phe Ser Val Tyr Ser Ala Ser
85              90              95

Thr His Lys Phe Leu Tyr Tyr Asp Glu Lys Lys Met Ala Asn Phe Gln
100            105            110

Asn Phe Lys Pro Arg Ser Asn Arg Glu Glu Met Lys Phe His Glu Phe
115            120            125

Val Glu Lys Leu Gln Asp Ile Gln Gln Arg Gly Gly Glu Glu Arg Leu
130            135            140

Tyr Leu Gln Gln Thr Leu Asn Asp Thr Val Gly Arg Lys Ile Val Met
145            150            155            160

Asp Phe Leu Gly Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys
165            170            175

Arg Gly Trp Gly Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu
180            185            190

Gly Asn Val Thr Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala
195            200            205

Gln Ile Lys Gly Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp Gln Phe
210            215            220

Glu Cys Leu Tyr Pro Tyr Pro Val His His Pro Cys Asp Arg Gln Ser
225            230            235            240

Gln Val Asp Phe Asp Asn Pro Asp Tyr Glu Arg Phe Pro Asn Phe Gln
245            250            255

Asn Val Val Gly Tyr Glu Thr Val Val Gly Pro Gly Asp Val Leu Tyr
260            265            270

Ile Pro Met Tyr Trp Trp His His Ile Glu Ser Leu Leu Asn Gly Gly
275            280            285

Ile Thr Ile Thr Val Asn Phe Trp Tyr Lys Gly Ala Pro Thr Pro Lys
290            295            300

Arg Ile Glu Tyr Pro Leu Lys Ala His Gln Lys Val Ala Ile Met Arg
305            310            315            320

Asn Ile Glu Lys Met Leu Gly Glu Ala Leu Gly Asn Pro Gln Glu Val
325            330            335

Gly Pro Leu Leu Asn Thr Met Ile Lys Gly Arg Tyr Asn
340            345

```

<210> 22

<211> 41

<212> PRT

<213> Homo sapiens

<400> 22

Ser Met Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu
 1 5 10 15

Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu
 20 25 30

Leu Leu Arg Ala Leu Asp Gln Val Asn
 35 40

<210> 23

<211> 52

<212> PRT

<213> Homo sapiens

<400> 23

Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly Gln Ser Met Asp Glu Ser
 1 5 10 15

Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile
 20 25 30

Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu
 35 40 45

Asp Gln Val Asn
 50

<210> 24

<211> 12

<212> PRT

<213> Homo sapiens

<400> 24

Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile
 1 5 10

<210> 25

<211> 12

<212> PRT

<213> Homo sapiens

<400> 25

Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu Asp
 1 5 10